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CURRICULUM VITAE

Steve Dillon is a senior lecturer in Music and Sound at Queensland University of Technology Faculty of Creative Industry. Steve's research focuses upon meaningful engagement with music-making and creative practice. Steve is director of the *save to DISC* (Documenting Innovation in Sound Communities/Curriculum) research project which examines and documents the qualities and relationships between music, meaning, health and well being. Steve is part of the creative communities research project at the Australasian CRC for Interactive Design (ACID) developing networked improvisational musical environments, protocols for eportfolio systems and rich media evaluation systems. He has recently been contracted by Cambridge Scholars press to write and edit a six book music and sound education series.

Before your eyes glaze over: advocating the expressive possibilities of digital technology in music experience.

Introduction

In this article I simply want to present three examples of where music making and technology when approached seamlessly and playfully make it worth the effort of engagement, one from personal observation and the others drawn from two ongoing research projects.

It sometimes seems to me that whenever music technology or technologically mediated research methods are mentioned many musicians, music academics and music educators' eyes glaze over and they advocate the purity of 'real instruments' or argue to 'restore the balance' toward acoustic and present experience or simply change the subject and move on. This response is perhaps understandably common

and is due to many reasons. For example the ICT industries penchant for acting as gatekeepers to these experiences as the holders of particular exclusive knowledge, the cliché of the technological ‘nerd’ whose social skills are lacking and the very real problem that the pace of technological change can make us all feel inadequate on a daily basis. Whilst there are many music educators who engage with technology effectively the kind of response where eyes glaze over is common, particularly for those of my own baby boomer generation of music teachers.

Amongst generation X and Y the relationship with technology is quite different. Although some in these generations experience ‘techno-phobia’ it is in fact it is ‘uncool’ to **not** be technological. This acts only to conceal the fear of technology much like how math-phobics and dyslexics build mechanisms for appearing to be engaging with the fear whilst building elaborate strategies for avoidance. Why is it when we see a trumpet or piano performance the expressiveness of the performances is not obscured for us by the technology of the piano hammer or the trumpet valve, we simply engage with the power of music. As Heidegger suggests (Heidegger, 1977.), technology both reveals and conceals and our philosophical problem in this domain is determining these effects (Farrell-Krell, 1993).

On observing the next generation

My daughter has used a laptop since age two and part of her musical life is involved seamlessly with technology. Her relationship with technology is one that simply provides her with access to musical experience through software for music games, downloads to her iPod, accompaniment recordings for violin practice and watching DVD performances of her favourite artists. She is not just a consumer but also a producer- what has been termed a ‘prosumer’, a term describing a form of simultaneous interactivity and consumption. I observed her openness to creatively using technology when she used the Apple software program ‘Garage Band’. Within minutes of opening the program she produced a loop based techno composition that involved her squealing over the top of the piece imitating the sounds made by her pet guinea pigs. Within minutes she had created a piece and was able to turn it into a CD. Her attitude to new technology in her life was one of engagement. As Brown describes in his model for modes of engagement an: appreciator, director, explorer, participant and selector, her relationship with technology and creative production

shifting depending on the need for making the creative product (Brown, 2000, 2003). Her acoustic music experiences are just as playful. She has access to school instrumental music, playing violin and singing in the choir. So technology is not a substitute for so called real music experiences but one that broadens her access to rich experience and enables a demystification of the process of contemporary music production. She understands the production process involved in the songs she downloads to her iPod and the notation she encounters in her violin performance because she has done it herself and seen it being done by musicians around her. For her the technology simply presents another place to play, another place to be expressive. It reveals possibilities.

My ten year old has alerted me to the expressive possibilities of technology in a seamless way- a place to play. I want to further describe the expressive possibilities of digital technologies based upon two quite different research projects that create possibilities for music experience to be present in the conversations about music. Projects that highlight what is revealed and concealed by technology in creative production. The first is *jam2jam* (<http://www.explodingart.com/>), which is a unique piece of ensemble performance software and the second is ePortfolio systems (<http://www.dmap.net.au>) for assessment in the arts. Both of these projects are part of large bodies of research supported by the ARC, Apple Computers and ACID (The Australasian CRC for Interaction Design) and have teams of researchers attached to them.

jam2jam

Computer musicians like Iannis Xenakis (Xenakis, 1991) and David Cope (Cope, 1992) have used generative algorithms to make complex electronic music composition. Advances in computer technology have made it possible to design music algorithms based upon specific pitch, timbre and rhythmic qualities that can be manipulated in real time with a simple interface that a child can control. Jam2jam is a software program that uses these ideas and involves what is called Networked Improvisation, which '*can be broadly described as collaborative music making over a computer network*' (S. Dillon & Brown, 2007). Users manipulate sliders and dials and influence changes in music in real time. This enables the opportunity for participants to interact with the sound possibilities of the chosen musical style as a focused

musical environment. Essentially by moving a slider or dial the user can change the intensity of the musical activity across musical elements such as rhythm, harmony, timbre and volume and the changes they make will respond within the framework of the musical style parameters, updating and recomposing within a quaver. This enables the users to play within the style and to hear and influence the shape and structure of the sound. What is different about this software is that through utilising a network you can create virtual ensembles, which are simultaneously collaborative and interactive.

This software was developed using philosophical design principals based on an understanding of meaning drawn from both software based and live music experiences (S. C. Dillon, 2001b) and research about how professional composers use technology in creative production (Brown, 2003). New music technologies have for centuries provided new expressive possibilities and an environment where humans can play. With *jam2jam* users can play with complex or simple musical ideas interact with the musical elements and hear the changes immediately doing so collaboratively in a virtual ensemble and both live and virtual performances. What is significant about this case is that it enables music to be present in a conversation about music. Users can focus on the particular configuration of the parameters of musical style that make styles/genres unique. It allows the groups of users and teachers the opportunity to both play as an ensemble and discuss the ensemble performance simultaneously. The performance is continuous and so conversations about the sound can occur with the music present. It also allows a ‘What if?’ scenario: what if there was more bass? What if the tempo was slower? What if we changed the timbre of the keyboard?

The conversation becomes necessarily focused around using musical terms and musical concepts, which pedagogically scaffolds the users reflection in and on the activity of music making. For education creating a networked musical environment allows teachers to focus attention on the expressive qualities of composition and this leads to a musical conversation about the music with the music present. Consequently the answer to each of the ‘what if’ questions can be heard and discussed.

Whilst we can focus listeners on musical ideas when playing a recording with this approach in this case we create a new kind of experience where the users can interact with the style/genre in a collaborative and safe environment where feedback is

immediate. The software establishes a relationship between the users ears, gesture and the musical ideas encapsulated by the algorithm. Thousands of children between the ages of 4 and 16 have used this software within moments of its introduction. What this research has alerted us to is that this kind of music technology allows us to be simultaneously immersed and apart from the experience of music making. It allows teachers to focus students' attention in an immersive environment and engage them with collaborative music making. It provides an opportunity to play in a playground filled with musical experiences which can be engaged with meaningfully.

Digital Media Asset Portfolio (DMAP)

Music performance is time dependent and ephemeral. This has always presented problems for assessment and peer reviewing of musical works. Reviews and assessment occur in an abstract textual form usually after and away from the performance. Music is not present in the conversation about music. However when I supervise a composition student we sit in a room with the score in front of us, the recording playing and access to other analytical and academic references. We are able to have a discussion about music with it present and with the added advantage of recall, review, comparison and annotation. Using digital video and audio artefacts we can enable the capture of these time dependent events to allow us to review and assess, refer to specific critical moments in performance or compare them against other representations such as a score. When we simply put these artefacts into an ePortfolio, which models an artists' folder and filing cabinet we can store and communicate both the process and product of music production. This provides an opportunity for assessment and review to take place in a more accountable way than a review comment alone. As we suggested in the Handbook of ePortfolio research the development of eportfolios:

'has created a confrontation with technology and the human technology relationship, which transforms the problems of ephemerality and temporal dependence into immediacy and accountability.' (S. Dillon & Brown, 2006)

What this means is that when we utilise the metaphor of the artist folio in the design of an ePortfolio we can overcome an eternal problem of music critique and assessment replacing ephemerality and time dependency with rigour and

accountability. This technology provides us with tools for how we evidence quality in music making.

Conclusion

My own enthusiasm for these projects has been fuelled by the expressive possibilities and the potential for these innovations to address problems we experience in music making and music education. When the technology becomes more transparent in the process of creative production of music and sound then we can focus on its expressive qualities. It is human to be playful and these cases are simply other ways and spaces where we can be playful with music and sound. (*S. Dillon, 2003, 2004, 2005; S. Dillon & Brown, In Press; S. C. Dillon, 2001a*) DMAP- ePortfolios illustrates that when we assess, evaluate or critique musical production or performance that our discussion need not be limited to abstract explanation that we can recall, review, talk about, talk over, annotate and analyse musical products, processes and experiences with music present in the conversation. A DMAP- ePortfolio represents the possibility of being more rigorous and accountable than disciplines that are limited and filtered by their alphanumeric based analysis and evidence. Rather than our eyes glazing over when technology mediates experience in music making we need to be able to see through the technology to the playfulness of the process and expressive qualities of the music and the opportunities for knowledge in the environment like children can. As Heidegger suggests technology both reveals and conceals. It also reveals and conceals something about those that interact with it in creative production and those that do not.

References

(Please note the projects presented here are not an attempt to be self-referential but to place the paper in the context of a body of research in these areas.)

- Brown, A. (2000). *Modes of compositional engagement*. Paper presented at the Australasian Computer Music Conference-Interfaces, Brisbane, Australia.
- Brown, A. (2003). *Music composition and the computer: an examination of the work practices of five experienced composers*. Unpublished PhD, University of Queensland, Brisbane.
- Cope, D. (1992). Computer Modelling of Musical Intelligence in EMI. *Computer Music Journal*, 16(2), 69-83.

- Dillon, S. (2003, 27th-30th September 2003). *jam2jam-Meaningful music making with computers*. Paper presented at the Artistic Practice as Research: 25th Annual Conference of the Australian Association for Research in Music Education, Brisbane, Queensland, Australia.
- Dillon, S. (2004). *Modelling, meaning through software design*. Paper presented at the 26th Annual Conference of the Australian Association for Research in Music Education, Southern Cross University Tweed Heads.
- Dillon, S. (2005). Meaningful engagement with music technology. In E. Mackinlay, D. Collins & S. Owens (Eds.), *Aesthetics and Experience in Music Performance* (pp. 327-341). Cambridge: Cambridge Scholars Press.
- Dillon, S., & Brown, A. (2006). The Art of ePortfolios: Insights from the creative arts experience. In A. J. a. C. Kaufman (Ed.), *Handbook of Research on ePortfolios: Concepts, Technology and Case Studies* (pp. 418-431). Indianapolis: Idea- Group Inc.
- Dillon, S., & Brown, A. (2007). Networked improvisational Musical Environments: learning through online collaborative music making. In J. Finney & P. Burnard (Eds.), *Embedding music technology in the secondary school*. Cambridge: Continuum Press
- Dillon, S., & Brown, A. (In Press). Networked improvisational Musical Environments: learning through online collaborative music making. In J. Finney & P. Burnard (Eds.), *Embedding music technology in the secondary school*. Cambridge: Continuum Press
- Dillon, S. C. (2001a). Making computer music meaningful in schools. *Mikropolyphonie-online journal*, 6.
- Dillon, S. C. (2001b). *The student as maker: An examination of the meaning of music to students in a school and the ways in which we give access to meaningful music education*. Unpublished PHD, La Trobe, Melbourne.
- Farrell-Krell, D. (1993). *Martin Heidegger, Basic Writings: from Being and Times (1927) to The Task of Thinking (1964)*. London: Routledge.
- Heidegger, M. (1977.). *The question concerning technology, and other essays / Martin Heidegger ; translated and with an introd. by William Lovitt*. New York: Garland Pub.
- Xenakis, I. (1991). *Formalized Music*. New York: Pendragon Press.